

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) Method A method for mass-spectrometric analysis of a known mutation sites site in genome DNA ~~by mutation dependent primer extension, the method comprising:~~
wherein the nucleotide chain of the providing an extension primer having a nucleotide chain that contains a photocleavable linker and attaching the primer to the DNA adjacent to the mutation site;
extending the primer using mutation dependent primer extension;
which is cleaved by cleaving the photocleavable linker with UV light irradiation to produce a DNA cleavage product; and
analyzing the DNA cleavage product using before mass spectrometric analysis.
2. (Currently amended) Method A method as in Claim 1, wherein the linker is located 3 to 10 bases from the 3' position of the primer.
3. (Currently amended) Method A method as in Claim 1, wherein the linker is derived from the class of chemical compounds known as o-nitrobenzyl derivatives.
4. (Currently amended) Method A method as in Claim 1, wherein the extension is carried out by using a mixture of four types of nucleoside triphosphate derivative terminators so that extension only takes place by precisely one base.

5. (Currently amended) Method A method as in Claim 4, wherein dideoxynucleoside triphosphates are used as the nucleoside triphosphate derivative terminators.
6. (Currently amended) Method A method as in Claim 1, wherein the extension using uses a mixture of non-terminating and terminating nucleoside triphosphate derivatives and is carried out so as to produce length differences in the extended primers of at least one base depending on mutation.
7. (Currently amended) Method A method as in Claim 1, wherein the an internucleotide cyanoethyl phosphite bond of the primer nucleotides between the linker and the 3' position are is sulphurized forming phosphorothioate nucleotides, and wherein the phosphorothioate nucleotides are alkylated before analysis by mass spectrometry.
8. (Currently amended) Method A method as in Claim 7, wherein the extension is carried out with a mixture of four types of nucleoside triphosphate derivative terminators and the negatively charged ions are measured in the mass spectrometer.
9. (Currently amended) Method A method as in Claim 8, wherein dideoxynucleoside triphosphates are used as the nucleoside triphosphate derivative terminators.
10. (Currently amended) Method A method as in Claim 9, wherein the extension is carried out with a mixture of four types of nucleoside triphosphate derivative terminators in which the nucleotide which that is inserted, like the phosphorothioate nucleotides of the primer, is alkylated before analysis by mass spectrometry and the negative ions are measured in the mass spectrometer.

11. (Currently amended) Method A method as in Claim 10, wherein α -thiodideoxynucleoside triphosphates are used as the nucleoside triphosphate derivative terminators.
12. (Currently amended) Method A method as in Claim 11, wherein each one of the α -thionucleoside triphosphate derivative terminators carries a chemical group with a positive charge in addition.
13. (Currently amended) Method A method as in Claim 10, wherein one of the phosphorothioate nucleotides of the extension primer carries a chemical group with a positive charge.
14. (Currently amended) Method A method as in Claim 13, wherein the chemical group carrying the charge is located on the second, third or fourth nucleobase counting from the 3' position.
15. (Currently amended) Method A method as in Claim 12, wherein the a chemical group carrying the charge is a quaternary ammonium group.
16. (Currently amended) Method A method as in Claim 10, wherein the primer for the primer extension carries an anchor for the attachment of a charge group which is attached before the analysis by mass spectrometry is carried out.
17. (Currently amended) Method A method as in Claim 16, wherein the anchor carries a free amino group.
18. (Currently amended) Method A method as in Claim 1, wherein ionization in the mass-spectrometric mass determination is achieved by using matrix-assisted laser desorption and ionization (MALDI).

19. (Currently amended) ~~Method~~ A method as in Claim 12, wherein ionization in the mass-spectrometric mass determination is achieved by using matrix-assisted laser desorption and ionization (MALDI), and wherein a matrix is used which does not contribute to the transfer of charge to the DNA products being measured.
20. (Currently amended) ~~Method~~ A method as in Claim 19, wherein α -cyano-4-hydroxycinnamic acid methyl ester is used as the matrix.
21. (Currently amended) ~~Method~~ A method as in Claim 1, wherein the 5' position of the extension primer is biotinylated.
22. (Currently amended) ~~Method~~ A method as in Claim 21, wherein the ~~primers~~ primer, after extension, ~~are~~ is bonded via biotin to ~~streptavidine molecules which are~~ a streptavidin molecule that is fixed to a surface for the purpose of purging all the components of the reaction fluid ~~which~~ that was required for the extension.
23. (Currently amended) ~~Method~~ A method as in Claim 22, wherein the ~~streptavidine~~ streptavidin is bonded to the ~~a~~ a surface of a sample support which is also used for further mass-spectrometric analysis.